

POROSHIN, A.F.... kandidat meditsinskikh nauk (Krasnodar)

Physical education for the middle aged. Zdorov'e 2 no.11:26-27 N '56.
(CALISTHENICS) (MLPA 10:1)

POROSHIN, A.F.

Method of ~~exercise~~ therapy in the treatment of corpulence at
a seaside health resort. Vop.kur., fizioter. i lech. fiz. kul't.
27 no.4:358-359 JI-Ag'62 (MIRA 16:11)

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POROSHIN, A.F., kandidat meditsinskikh nauk

Exercise therapy in occupational diseases of the hands in milkmaids.
Gig. i san. 21 no.4:49-50 Ap '56. (MLRA 9:7)

1. Iz kafedry fizicheskogo vospitaniya i lechebnoy fiskul'tury
Kubanskogo meditsinskogo instituta.

(OCCUPATIONAL DISEASES?

hand dis. in milkmaids, exercise ther. (Rus))

(HANDS,

occup. in milkmaids, exercise ther. (Rus))

(EXERCISE THERAPY, in various diseases,

hand dis., occup. in milkmaids (Rus))

POROSHIN, A.F., kand.med.nauk

Prevention of diseases of the hand in milkmaids. Gig. i san.
25 no. 6:62-63 Je '60. (MIRA 14:2)

1. Iz kafedry sportivnoy meditsiny Kubanskogo meditsinskogo
instituta.

(HAND—DISEASES)

(MILKING—HYGIENIC ASPECTS)

POROSHIN, A.S.

Semiautomatic units used for checking technical weights. Iss. tech.
no.2:55-58 Mr-Ap '57. (MIRA 10:6)

(Weights and measures)

SOV/115-59-6-29/33

28(1,2)

AUTHOR:

Poroshin, A.S.

TITLE:

The Mechanization of Marking Weights

PERIODICAL:

Izmeritel'naya tekhnika, 1959, Nr 8, p 72 (USSR)

ABSTRACT:

At the Mitinskiy chugunoliteyny zavod Tul'skogo sovnarkhoza (Mitino Iron Foundry of the Tula Sovnarkhoz) a device is being manufactured for mechanizing the marking of weights. The device, suggested by the author of this article, is shown by a diagram. The experimental device by the author was driven by a 50-watt electric motor with 1490 rpm. It was possible to mark 1000 weights per hour with the aid of this device. The stamp performing the marking of the weight is mounted at the end of a spring-loaded rod. The weight to be stamped is placed on the work table of the device. Upon pushing the starting button, an electric motor, geared to a transmission, will start to move the rod whereby the spring is compressed. Since some of the teeth in the transmission have been cut, the rod will be released as soon as the spring is compressed. The force of the spring is adequate to impress the mark into the metal of the weight. There is 1 diagram.

Card 1/1

- [illegible]

ZHIZHIN, S.; POROSHIN, B.N.

Agriculture - Study and Teaching

Organization of work in increasing the qualification of agricultural specialists in 1953. Dost. sel'khoz. No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

ACCESSION NR: AT4008632

S/3040/63/000/002/0105/0115

AUTHORS: Baluyev, A. N.; Bratchikov, I. L.; Balina, G. I.; Igolkin, V. N.; Kovrigin, A. B.; Marty*nenko, B. K.; Poroshin, B. S.; Surin, S. S.

TITLE: Compiling routine for an electronic digital computer using input language ALGOL

SOURCE: Leningrad. Universitet. Kafedra vy*chislitel'noy matematiki i vy*chislitel'ny*y tsentr. Vy*chislitel'naya tekhnika i voprosy*, programmirovaniya, no. 2, 1963, 105-115

TOPIC TAGS: digital computer, digital computer compiler, ALGOL computer language, computer language, complex algorithm, computer programming, machine language, binary code computer, computer input language, ALGOL

ABSTRACT: The input language and the algorithm of the programming

Card 1/2

ACCESSION NR: AT4008632

program developed in the Computation Center of Leningradskiy Universitet (Leningrad University), which is an abbreviated and modified variant of ALGOL-60, is described. The language differs from ALGOL in that the program as a whole constitutes one block and there are no descriptions of types; a separate class of identifiers is used for each class. The operators (particularly the procedure operators) and the description of the procedures are simplified and standardized. The input language itself and the operating principles of the programming program are described in detail and the algorithm for solving a system of linear algebraic equations of 50th order by the Gauss method, with choice of the principal element, is used as an example. Orig. art. has: 28 formulas.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 15May62

DATE ACQ: 23Jan64

ENCL: 00

SUB CODE: CP

NO REF SOV: 002

OTHER: 000

Card 2/2

POROSHIN, B.S.

Programming program for the "Ural-1" electronic computer. Vych.
tekh. i vop. prog. no.1:72-91 '62. (MIRA 16:6)
(Electronic computers). (Programming (Electronic computers))

TRISHEVSKIY, I.S., kand.tekhn.nauk (Khar'kov); MIROSHNICHENKO, V.I., inzh.
(Khar'kov); POROSHIN, B.V., inzh. (Khar'kov)

Use of bent sections in machinery building for transportation.
Zhel.dor.transp.44 no.3:41-42 Mr '62. (MIRA 15:3)
(Railroads--Cars--Design and construction)

~~POROSHIN, F.M.~~

Photographing the rocket carrier of the third Soviet satellite
with narrow-film cameras. Biul.sta.opt.nabl.isk.sput.Zem.
no.7:24 '59. (MIRA 13:5)

1. Omskaya stantsiya nablyudeniya iskusstvennogo zenii.
(Artificial satellites--Tracking) (Astronomical photography)

POROSHIN, F.M.
29(5)

PHASE I BOOK EXPLOITATION

SOV/3312

Akademiya nauk SSSR. Astronomicheskii sovet.

Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov zemli,
no. 7 (Bulletin of Stations for Optical Observation of Artificial Earth
Satellites, nr. 7) Moscow, 1959. 29 p. 500 copies printed.

Resp. Ed.: Ye.Z. Gindin; Editorial Secretary: O.A. Severnaya

PURPOSE: The book is intended for scientists engaged in earth-satellite research
and for students of astronomy.

COVERAGE: The collection of articles summarizes the results of observations of
the Soviet earth satellites. The treatment includes: methods of observation,
moments of maximum visibility, devices and cameras used, tables with data.
There are numerous figures and some Soviet references. Each article in this
collection is accompanied by an English annotation.

TABLE OF CONTENTS:

Tol'skaya, V.A., Council on Astronomy, Academy of Sciences, USSR. Meeting (Con-
ference) of Heads of Stations for Observation of Artificial Earth Satellites 1

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Bulletin of Stations (Cont.)

SOV/3312

The article reports on the conference of heads of stations for observation of artificial earth satellites, which took place in Moscow, 15-17 April, 1959. The introductory speech was made by A.G. Masevich, acting chairman of the Council on Astronomy, Academy of Sciences, USSR, who summarized achievements in methods of observation, described the practice of exchanging data among individual stations and reported on the publishing of such data in special bulletins. A paper on the "Characteristics of Satellite Orbits" was read by A.A. Mashkov, stressing the importance of the obliquity of the ecliptic in determining the velocities of interplanetary flights. A report on the "Application of Results Obtained From Optical Observations of Artificial Earth Satellites" was read by Yu.V. Batrakov of the ITA (Institute of Theoretical Astronomy [Leningrad]). Batrakov reported on programming of data in electronic computers, on the construction of graphs showing changes of certain physical elements (e.g., atmospheric resistance) with time and the irregularity of such changes, and on photographic observations. The present practice of processing photographic data as well as photometric methods of observations were the subject of the paper by Professor V.P. Tsesevich of Odessa. A new instrument for determining the brightness of artificial earth satellites was described by V.V. Shmeling of Riga. A.A. Kiselev of the GAO [Main Astronomical Observatory, Leningrad-Pulkovo] introduced a method for determining the direction of the

Card 2/7

Bulletin of Stations (Cont.)

SOV/3312

axis of rotation of sputniks. A number of improvements in observation methods were suggested by A.Ya. Virin of Smolensk, S.A. Ieshakov of Petrozavodsk, and A.G. Sukhanov of Vladivostok. Coordinate systems and measuring equipment were discussed by V.N. Ivanov of Krasnodar, V.V. Shmel'ing of Riga, Ya.E. Eynasto of Tartu, A.K. Osipov of Kiyev, V.I. Kuryshchev of Ryazan', V.A. Sorokin of Khabarovsk, G.D. Kvirkveliya of Tbilisi, and A.M. Isayev of Baku. Methods of tabulation and computation of the ephemeris were discussed by V.Ye. Solov'yev of Dnepropetrovsk and I.A. Klimishin of L'vov. Differences in methods and equipment for photographing artificial earth satellites at observation stations, and data on cameras used at Omsk, Orenburg (Chkalov), L'vov, Vologda, Yuzhno-Sakhalinsk, and Kzyl-Orda, are discussed. Two names are mentioned: K.N. Kan of Yuzhno-Sakhalinsk and S.Kh. Khusainov, chief of the observation station at Kzyl-Orda. The organizational aspect of observations was discussed by Ye.Z. Gindin, scientific secretary to the Astronomic Council, Academy of Sciences, USSR, who stressed the importance of data obtained from sputnik observation stations in the study of astronomy at schools of higher technical education.

Tsessevich, V.P. Brightness Variations of Rocket Carriers

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The author discusses the variation in brightness and their dependence on the changes in the axis-direction of sputniks. Data collected from 33 observation points (localities are given) were processed at the Astronomical Observa-

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Bulletin of Stations (Cont.)

SOV/3312

tory of Odessa. The present article discusses the methods applied to the processing of the above data and presents two theories: one on the specular and another on the diffuse reflection of light. Both theories are applicable to solving the problem of brightness variations.

Tsesevich, V.P. Rotation Period of the Rocket Carrier of the Third Soviet Sputnik 8
A linear expression for rotation periods based on data from 5 observation stations is derived, applicable to the moments of maximum brightness of sputnik III. Variations were registered throughout the month of August, 1958. The derived expression is subject to discussion. The study was conducted at the Astronomical Observatory of Odessa.

Grigorevskiy, V.M. Photometric Methods of Studying Artificial Earth Satellites 14
The study was conducted at the Astronomical Observatory of Odessa. Several methods are discussed and evaluated, but no positive conclusions drawn. The methods discussed were used in observations of both the second and third Soviet satellites. Data collected by V.P. Tsesevich of Odessa and B.M. Gimmel'farb of Arkhangel'sk are analyzed. A method based on the study by V.P. Tsesevich for photometric observation of satellites with considerable brightness variations is presented. There are 6 Soviet references.

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Bulletin of Stations (Cont.)

SOV/3312

Gimmel'farb, B.N., and V. Art^{em}ova. Observations of Brightness Variations of the Rocket Carrier of the Third Soviet Satellite 18

The study was conducted at the satellite-observation station attached to the State Pedagogical Institute imeni Lomonosov at Arkhangel'sk. Six passages of the third Sputnik were recorded, in October and November of 1958, with the aim of establishing the mean period of brightness variations. Moments of maximum brightness were determined by a method suggested by V.M. Grigorevskiy. A magnetophone used for this purpose and the method used are described. The method was improved by A.A. Chirtsov from Arkhangel'sk.

Yaroshevich, S.V. Computer Attached to the AT-1 Telescope 19

The article describes an automatic computer attached to the AT-1 telescope. The apparatus is used for determining equatorial coordinates of sputniks. The tests were conducted at the Dnepropetrovsk satellite-observation station of the local state university, where the apparatus was designed. An annotation is enclosed, signed by N.N. Mikhel'son, a senior scientific staff member of the Main Astronomical Observatory, Leningrad-Pulkovo, in which he suggests an improvement in the method of using the described apparatus.

Card 5/7

Bulletin of Stations (Cont.)

SOV/3312

Bugoslavskaya, Ye.Ya. Special Satellite Plate Holder 22
A plate holder is described for obtaining time marks on the satellite image by means of a moving grating placed in front of the plate. The plate was designed by the author, in collaboration with Engineer N.I. Yakovlev, at the State Astronomical Institute imeni P.K. Shternberg (University of Moscow), and tested by the author in collaboration with I.A. Khasanov.

Poroshin, F.M. Methods of Photographing the Rocket Carrier of the Third Soviet Satellite by 35-mm Cameras 24
The photographs were taken by the FED-2 camera equipped with a Fotokor shutter. The tests were conducted at the Omsk satellite-observation station.

Results of Photographic Observations of Artificial Earth Satellites 25
The observations were conducted at the Latvian State University by E.Ya. Zabolovskis, head of the Photographic Observation Station, and E.E. Tardenaks and M.K. Abele; at the Tashkent Astronomical Observatory, Academy of Sciences, Uzbek SSR, by A.A. Latypov, head of the Photographic Observation Station, and A. Kadyrov, A. Rakhimov, G. Kim, and Yu. Ivanov. Tables are presented and apparatus described.

Card 6/7

82724

S/138/59/000/012/004/006

15.9120

AUTHORS: Zakharov, N. D., Poroshin, G. V.

TITLE: The Non-Sulfur Vulcanization of Synthetic Rubbers. Communi-
cation 2: The Vulcanization of Butadiene-Nitrile Rubbers Using
Certain Metal Chlorides ¹⁵ ₁₆

PERIODICAL: Kauchuk i Rezina, 1959, No. 12, pp. 14-18

TEXT: The authors have investigated the vulcanization process of CKH (SKN) rubbers using zinc chloride and a few other metal chlorides. The mixture investigated is given and the experimental procedure is described. The porosity is eliminated and the physico-mechanical properties of the vulcanizates are improved with the addition of moisture during the vulcanizing process. Fig. 1 shows how the moisture quantity affects the vulcanizate properties based on SKN-40 rubber with 5 weight parts of $ZnCl_2$ (at $143^{\circ}C$, the vulcanization process lasting 10 minutes). With a 60% moisture content in the vulcanizates, the porosity reappears. The moisture distributes the zinc chloride in the mixture thus improving the physico-mechanical properties of the vulcanizate. This assumption was confirmed experimentally. Another explanation for the moisture effect is the

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82724

S/138/59/000/012/004/006

The Non-Sulfur Vulcanization of Synthetic Rubbers. Communication 2: The
Vulcanization of Butadiene-Nitrile Rubbers Using Certain Metal Chlorides

interaction of the moisture with the zinc chloride forming active structuralizing compounds. An increase in the quantity of $ZnCl_2$ increases the structuralizing processes. The technological properties of the mixtures drop. At a dosage of 20 weight parts of $ZnCl_2$ the scorching increases. The effect of temperature and the vulcanization period was also investigated for non-filled and carbon black mixtures with 5 weight parts of $ZnCl_2$ containing an optimum amount of moisture. The structuralizing processes increase with an increase in the duration and temperature of the vulcanization. The relative elongations continuously decrease in all cases and the moduli increase. It was also found that with an increase in the nitrile group content the strength, hardness, oil- and gasoline resistance of the rubbers increase and the elasticity and the frost-resistance decrease in the case of zinc-chloride vulcanizates. (Fig. 3-6, Table 3). A comparison is drawn between the mechanism of the structuralizing processes in the presence of $ZnCl_2$ and thermovulcanization. The properties of the zinc chloride vulcanizates of carbon black mixtures based on SKN-rubber are given in Table 1. Other metal chlorides were also investigated, such as $AlCl_3$, $FeCl_3$, $SnCl_2$, $CaCl_2$, $BaCl_2$, $MgCl_2$ as to their effect on the

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82724

S/138/59/000/012/004/006

The Non-Sulfur Vulcanization of Synthetic Rubbers. Communication 2: The Vulcanization of Butadiene-Nitrile Rubbers Using Certain Metal Chlorides

vulcanization process. Of these compounds $AlCl_3$, $FeCl_3$ and $SnCl_2$ have a vulcanizing effect on the SKN-26 mixtures. The properties of the rubber mixtures vulcanized with these three compounds are listed in Table 2. According to the main indices these vulcanizates are not inferior to sulfur vulcanizates. The conclusion is drawn that the introduction of $ZnCl_2$ into the mixture increases the rate of the structuralizing process significantly and increases some of the physico-mechanical properties of the vulcanizates. Some of the differences of the moduli were also noted. The change in the hardness of the zinc chloride vulcanizates is a linear function of the temperature, just as in the case of the sulfur vulcanizates (Fig. 7). Some of the other advantages of the $ZnCl_2$ SKN-based rubbers are their wear-resistance and destruction resistance under repeated deformations (bending, compression). They are inferior to sulfur vulcanizates in their elasticity and rupture-resistance. They are equal in their aging resistance. The $ZnCl_2$ mixtures have a greater tendency to premature vulcanization. It was also found that by using $ZnCl_2$ the vulcanization of non-filled mixtures based on SKN rubber can be carried out. The authors conclude: 1) that

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POROSHIN, I.

Improving the equipment and sanitation of the work area. Sots.trud.
no.9:88-91 S '56. (MIRA 9:12)

1. Direktor Ivanovskogo instituta okhrany truda Vsesoyuznogo
TSentral'nogo Soveta professional'nykh soyuзов.
(Industrial hygiene)

L 62858-65

ACCESSION NR: AP5019037

UR/0286/65/000/012/0069/0069
69.057.528

3

AUTHOR: Geskin, G. I.; Dubich, Yu. N.; Dragonenko, N. Ya.; Krichevskiy, P. M.;
Poroshin, I. I. B

TITLE: A building form which slides horizontally. Class 37, No. 172019

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 69

TOPIC TAGS: concrete, construction method, concrete form

ABSTRACT: This Author's Certificate introduces a building form which slides horizontally. The device is designed for concreting the walls of long structures such as sedimentation tanks. The form contains a frame made up of columns and girders. The unit is designed for putting up walls which vary in thickness and inclination with height. A portion of the columns which make up the frame is fastened to the girders which are set across the wall and located on a level with the top and bottom of the wall. Provision is made for moving the columns along the girders and stopping them at the required position.

ASSOCIATION: none

Card 1/3

L 62858-65

ACCESSION NR: AP5019037

SUBMITTED: 28Nov63

ENCL: 01

SUB CODE: GO

NO REF SOV: 000

OTHER: 000

Card 2/3

L 62858-65

ACCESSION NR: AP5019037

ENCLOSURE: 01

0

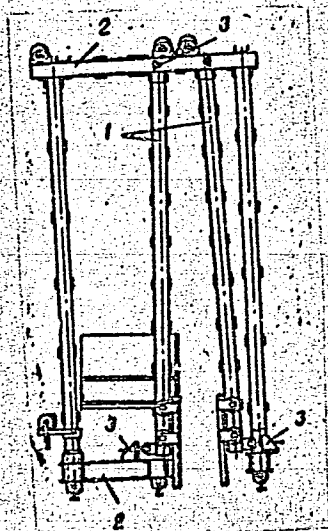


Fig. 1. 1--columns;
2--girders; 3--column stops

dm
Card 3/3

POROSHIN, I.I., inzh.

Role of the pressing and pulverizing action of crusher rolls.
Stroi. i dor.mash. 9 no.10:26-27 0 '64.

(MIRA 18:1)

POROSHIN, K.K.; GAL'J-OGly, G.A. (Moskva)

Oncocytomas. Arkh. pat. 27 no.8:43-49 '65.

(MIRA 18:10)

1. TSentral'naya patologoanatomicheskaya laboratoriya (nachal'nik -
kand.med.nauk A.K.Apatenko) pri TSentral'nom voyenno-meditsinskom
upravlenii Ministerstva oborony SSSR i gorodskaya bol'nitsa No.57
(glavnyy vrach S.B.Vol'fsan).

SEMENOVICH, N.I., kand. med. nauk; STEPANOV, N.G., kand. med. nauk;
GALIL-OGLY, G.A., kand. med. nauk; POROSHIN, K.K., kand. med.
nauk

Some data on the clinical and morphological aspects of Chiari's
disease. Sov. med. 28 no.8:26-31 Ag '65. (MIRA 18:9)

POROSHIN, K.K. (Moskva)

Morphology and the dynamics of the development of brown fat
in man. Arkh. pat. 27 no.6:40-47 '65. (MIRA 19:1)

1. TSentral'naya patologoanatomicheskaya laboratoriya (nachal'nik -
podpolkovnik med. sluzhby kand. med. nauk A.K. Apatenko) pri
TSentral'nom voyenno-meditsinskom upravlenii Ministerstva oborony
SSSR. Submitted May 12, 1964.

POROSHIN, K.K. (Moskva); SKURKOVICH, G.V. (Moskva)

Five cases of cylindromas. Zhur.ush., nos. i gorl. bol. 24 no.5:74-
76 S-C '64. (MIRA 18:3)

FISHZON-RYSS, Yu. I., kand. med. nauk; POROSHIN, K. K.

Clinical aspects and pathological anatomy of hormonally inactive
forms of cancer of the adrenal cortex. Nov. khir. arkh. no.2:
62-67 '62. (MIRA 15:2)

(ADRENAL CORTEX--CANCER)

GALIL-OGLY, G. A. (Moskva, D-80, ul. Vrubelya, 6, korp. 5, kv. 16);
POROSHIN, K. K. (Moskva, G-34, Kursovoy per., 4/2, kv. 15)

Tumors of the sympathetic nervous system. Vop. onk. 8 no.7:
31-38 '62. (MIRA 15:7)

1. Iz gorodskoy bol'nitsy No. 57 g. Moskvy (glav. vrach - S. B.
Vol'feon) i Tsentral'nov natsionalnoanatomicheskoy laboratorii
(nach. - prof. A. V. Smol'yannikov), Moskva.

(NERVOUS SYSTEM, SYMPATHETIC—TUMORS)

APATENKO, A. K.; POROSHIN, K. K. (Moskva)

Morphology and histogenesis of hibernoma. Arkh. pat. no.2:60-65
'62. (MIRA 15:2)

1. Iz tsentral'noy patologoanatomicheskoy laboratorii (nach. -
prof. A. V. Smol'yannikov) pri Voeyenno-meditsinskom upravlenii
Ministerstva oborony SSSR.

(TUMORS)

FISHZON-RYSS, Yu.I., kand.med.nauk; GALIL-OLLY, G.A., kand.med.nauk;
POROSHIN, K.K. (Moskva)

Adrenal neuroblastomas. Klin.med. 40 no.6:71-78 Je '62.
(MIRA 15:9)

1. Iz 57-y bol'nitsy Moskvyy (glavnyy vrach S.B. Vol'fson).
(ADRENAL GLANDS—CANCER)

GURTOVOY, I.Ye.; POROSHIN, K.K.

Recurrent mesenchymal tumor of the retroperitoneal space. Vop. onk.
II no.5:108-110 '66. (MIRA 1966)

1. Iz Moskovskogo gosodnogo onkologicheskogo dispensera (glavnyy
vrach - P.Ye. Vakhchevich, vedushchiy onkolog - S.I. Mintz).

POROSHIN, K.K.. (Moskva)

Rupture of the heart in endocardial fibroelastosis. Arkh. pat. 25
no.11:81-84 '63. (MIRA 17:12)

1. Iz TSentral'noy patologoanatomicheskoy laboratorii (nachal'nik -
prof. A.V.Smol'yannikov) pri TSentral'nom voyenno-meditsinskom uprav-
lenii Ministerstva oborony SSSR.

GALIL_OGLY, G.A.; POROSHIN, K.K.

Reticulosarcomatosis with disorder of the brain and spinal cord.
Zhur. nevr. i psikh. 61 no.11:1655-1657 '61. (MIRA 15:2)

1. Patologoanatomicheskoye otdeleniye (zav. G.A.Galil-Ogly) bol'nitsy
No.57 g. Moskvyy (glavnyy vrach S.B.Vol'fson).
(BRAIN_TUMORS), (SPINAL CORD_TUMORS)

POROSHIN, K.M. kandidat tekhnicheskikh nauk; PRAVDA, Ye.I., starshiy
nauchnyy sotrudnik; PETKEVICH, V.P., starshiy nauchnyy sotrudnik.

Increase the production of tomato products at canning factories.
Trudy VNIKOP no.6:3-13 '56. (10:5)
(Tomatoes) (Canning industry)

~~POROSHIN, Kirill Mikhaylovich, kand.tekhn.nauk; KHMEL'NITSKAYA, A.Z., red.;~~
~~RISINA, Ye.I., tekhn.red.~~

[Calculating the capacity of the equipment of canning plants]
Raschet tekhnicheskoi moshchnosti oborudovaniia konservnykh
zavedov. Moskva, Pishchepromizdat, 1958. 297 p. (MIRA 11:12)
(Canning industry--Equipment and supplies)

POROSHIN, K.M., kandidat tekhnicheskikh nauk; PETKEVICH, V.P., starshiy
nauchnyy sotrudnik; PRAVDA, Ye.I., starshiy nauchnyy sotrudnik.

Production line for tomato paste. Trudy VNIKOP no.6:14-32 '56.
(MLRA 10:5)

(Canning and preserving--Apparatus and supplies)

PROCESSING AND PROPERTIES INDEX																									
1ST AND 2ND ORDERS													3RD AND 4TH ORDERS												
<p><i>CP</i></p> <p>Plastic masses. P. I. Vokresenski and K. T. Poroshina. Russ. 50,701, March 31, 1940. An alk. soln. of vegetable albumin is treated with a soln. of sulfonaphthoic acids and the sepd. residue is treated in the manner customary in the industry for plastic masses.</p>																									
<p>ASB-11A METALLURGICAL LITERATURE CLASSIFICATION</p>																									
<p>1ST AND 2ND ORDERS</p>													<p>3RD AND 4TH ORDERS</p>												

POROSHIN, K.T.

The area of primary destruction of protein. Spectrophotometric observations. K. T. Poroshin (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Doklady 6-oi Konf. Vysokomolekul. Soedineniyam, Akad. Nauk S.S.S.R. 1949, 103-205; cf. C.A. 47, 8114s.*—In destruction of protein by mineral acids and enzymes there are formed peptides which yield the red biuret complex. A method of differential spectrophotometry was developed for the study of stability of Cu complexes of peptides vs. pH. The peptide mixt. is treated with a standardized soln. of CuSO_4 (or acetate) and as the soln. is added the absorption of light is intensified (max. at 605 m μ) until all tetrapeptide is bound. When the tripeptide begins to react the absorption max. shifts to the longer wave lengths, 680 m μ being the max. shift point. The vol. of soln. used is a measure of the peptide present. *Decompos. of proteins during hydrolysis is discussed (cf. Akinova, et al., C.A. 43, 3790g).* G. M. Kosolapoff

POROSHIN, K. T.

Poroshin, K. T. "Investigations in the field of peptones", (Report), Soobshch. o nauch. rabotakh chlenov Vsesoyuz. khim. o-va im. Mendeleyeva, 1949, Issue 2, p. 3.

SO: U-4630, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

POROSHIN, K. T.

Poroshin, K. T. "A differentiated method of spectrophotometry of the copper complexes of the destruction products of proteins", (Report), Soobshch. o nauch. rabotakh chlenov Vsesoyuz, khim. o-va im. Mendeleyeva, 1949, Issue 2, p. 3-4.

S O: U-4630, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statcy, No. 23, 1949).

CA

The molecular weight of proteins (Molecular weights of proteins of the proteoid type and their hydrolysis products). N. T. Porgubis and I. Ya. Sionina (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1966, 618-20. — From measurements of the viscosity and of the diffusion coeff. D of 0.15-0.20% solns. of the protein in a buffer of NaCl 10 KCl 1.0, K_2HPO_4 5.0 g./l. H_2O , the mol. wt. $M = 3.6 \times 10^{-4} / D^2 (f/f_0)^2 V$ (where V = partial sp. vol. of the solute, f/f_0 = ratio of the friction coeff. of the ellipsoid-shaped mol. with the axis ratio b/a and of a spherical mol. of the same vol.) was detd., for casein acid, to 412,000, and for a protein from the castor-oil plant, to 38,000; the f/f_0 and b/a values are, resp., 1.55 and 10.2; 1.85 and 16.6, i.e. the mols. are very markedly elongated. Despite the very great difference of the mol. wts., the products of primary hydrolysis have very close mol. wts., $M = 750$ and 950 , resp.; the b/a ratios for the hydrolysis products are 3.2 and 4.0, resp., i.e. the products are closer to spherical. N. Thon

POROSHIN, K. T.

POROSHIN, K. T. - "Investigation in the Field of the Primary Destruction of Proteins." Sub 6 Mar 52, Inst of Organic Chemistry, Acad Sci USSR. (Dissertation for the Degree of Doctorates in Chemical Sciences).

SO: Vechernaya Moskva January-December 1952

POROSHIN, K.T.

Chemical Abstracts
May 25, 1954
Biological Chemistry

①
Metalloörganic biuret complexes of the products of decomposition of protein. K. T. Poroshin. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 963-5 (Engl. translation). — See *C.A.* 47, 4929c.
H. L. H.

Pereshin, K. T.

Cyclopeptide structure of proteins: K. T. Pereshin, *Doklady Akademiya Nauk, Teor. i Prikl. Khim.*, XIII Kongr., Stockholm 1953, 219-38 (in Russian); 239-59 (in French).—A discussion favoring the view that proteins consist of polypiperazine chains with tripeptide side-chain substituents on some of the piperazyl residues. This view is based on an interpretation of the absorption spectra of alk. Cu complexes of proteins and polypeptides.

J. P. Danchy

POROSHIN, K. T. ed.

Status of theory of chemical structure in organic chemistry Moskva, 1954.
122 p.

1. Chemistry, Physical and theoretical. 2. Chemistry, Organic.
- I. Poroshin, K. T., ed.

POROSHIN, K.T., akademik; DAVIDYANTS, S.B.; BURICHENKO, V.K.; BUGAKOVA,
L.V.

Synthesis of alkaloid-peptide compounds. Dokl. AN SSSR 156
no. 5:1118-1120 Je '64. (MIRA 17:6)

1. Institut khimii AN TadzhSSR. 2. AN TadzhSSR (for Poroshin).

POROSHIN, K. T.

USSR/ Chemistry Organic chemistry

Card : 1/1 Pub. 40 - 13/27

Authors : Korshak, V. V., Poroshin, K. T., and Kozarenko, T. D.

Title : From the field of high molecular compounds. Part 64.- Polycondensation of ethyl ether of d,l-alanine

Periodical : Izv. AN SSSR. Otd. khim. nauk 4, 663 - 669, July - August 1954

Abstract : The polycondensation reaction of ethyl ether of d,l-alanine, was investigated at various temperatures to determine the effect of catalysts on this process. The effect of acids (including carbonic and amino acids), and bases on the rate of polycondensation reaction, is discussed. The kinetics of the polycondensation was investigated in the presence of carbonic anhydride, acetic acid, polyalanine and without the catalyst. The water-soluble products, obtained from combined polycondensation of ethyl ethers of d,l-phenylalanine and glycol, are described. Twelve references: 4 USSR; 5 German; 2 USA and 1 Swiss (1894 - 1951). Tables; graphs; diagrams.

Institution : Acad. of Sc. USSR, Institute of Organic Chemistry

Submitted : August 29, 1953

POROSHIN, K.T.

✓ Determination of diketopiperazines in products of poly-
condensation of esters of α -amino acids. K. T. Poroshin,
T. D. Kozarenko, and Yu. I. Khurgin ~~Ch. D. Belman~~ CH:
Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow. *Izv.*
Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1955, 773-4;
cf. N. I. Gavrilov, et al., *Vestnik Moskov. Gosudarst. Univ.*
No. 1, 106 (1948).—The specimens are hydrolyzed with 0.1N
NaOH 1 hr. at 40°, which cleaves all diketopiperazines to
dipeptides, and the product is titrated with 0.04N CuSO_4
from red-violet to a blue color; the results are within 2%
of photometric or van Slyke detn. of amino N.

G. M. Kosolapoff

(2)

MA 8/24

POROSHIN, K. T.

Chem ✓ Polyscondensation of glycine ethyl ester. V. V. Korshak, K. T. Poroshin, and T. D. Kozarenko. *Izv. Akad. Nauk SSSR Khim. Nauk* 1955. 1112-17. $\text{H}_2\text{NCH}_2\text{CO}_2\text{Et}$ can be stored up to 2 months in very dil. soln. in dry CO_2 . Heating the ester with CO_2 in ampula resulted in formation of polymeric products (kinetic curves, obtained by N content, are shown). The reaction is accelerated by elevated temp. and catalytic effects are shown by CO_2 , polyglycine and traces of moisture. Higher temp. tends to increase the proportion of cyclic product (dioxopiperazine), which may reach 53%. Polymers of mixed types were similarly formed from Et esters of glycine, alanine, valine, norleucine, phenylalanine and aspartic acid. The product from glycine and alanine had the least soly. in H_2O (20%) when it was composed of equimolar proportions of ingredients; this also had the highest m.p. (290°) (with decomp.). All the polymers m. about 240-300°, while artificial mixts. of the amino acids decomp. on heating.
G. M. Kosolapoff

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EM

POROSHIN, K.T.; KOZARENKO, T.D.; KHURGIN, Yu.I.

Differential titration of tripeptides and diketopiperazines in the products of polycondensation of the ethyl ester of glycine. Izv. AN SSSR.Otd.khim.nauk no.5:626-628 My '56. (MLBA 9:9)

1.Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR.
(Titration) (Glycine) (Condensation products (Chemistry))

POROSHIN, K.T.

Certain peculiarities in the polymerization of anhydrides of N -carboxy-
- α -amino acids. Izv.AN SSSR Otd.khim.nauk no.6:743-746 Je '56.

(MLRA 9:9)

1. Institut organicheskoy khimii imeni N.D.Zelinskego Akademii nauk SSSR.
(Anhydrides)

Poroshin, K.T.

✓ Kinetics and chemistry of reaction of polycondensation of ethyl ester of glycine. K. T. Poroshin, T. D. Kozarenko, and Yu. I. Khurein (N. D. Zelinskii Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow, 1974) *Chem. Abstr.* 1975, 100:100. *Chem. Abstr.* 1975, 100:100. — Compn. of products of polycondensation of $H_2NCH_2CO_2Et$ in the presence of 3% CO_2 at 40° was detd. (cf. *C.A.* 49, 10583f for method) at various periods of reaction and the results are shown graphically. The utilization of the monomer follows 1st-order kinetics. In the first 2-3 hrs. the formation of dioxypiperazine predominates, after which the content of the latter declines owing to more rapid accumulation of products of linear condensation; max. concn. of tripeptide ester occurs in 5-7 hrs., when most of the monomer has been used up and the reaction proceeds with esters of the lower peptides. G. M. Kosolapoff

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POROSHIN, K. T.

Kinetics and chemistry of the polycondensation of esters of α -amino acids. IV. Combined polycondensation of glycine ethyl ester and *N*-carboxyglycine anhydride. K. T. Poroshin, T. D. Kazarenko, and Yu. I. Khurgin (N. D. Zelinskii Inst. Org. Chem., Moscow). *Izv. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1956, 1500-2; cf. *C.A.* 51, 4947b. —Heating mixts. of various proportions of $H_2NCH_2CO_2Et$ and *N*-carboxyglycine anhydride either alone or in dry dioxane at 40° failed to yield any free peptides, but did yield (as established by paper chromatographic sepu. in $BuOH \cdot AcOH \cdot H_2O$) 10-33.6% Et esters of tripeptides, tetrapeptides, pentapeptides, and hexapeptides of glycine, and the condensation product of the initial monomers, along with variable amts. of dioxopiperazines. The results suggest that the peptide chain grows from the amino terminus. G. M. Kosolapoff

Poroshin, K.T.

USSR/Organic Chemistry. Natural Substances and Their Synthetic Analogues. E-3

Abs Jour: Ref Zhur- Khimiya, No. 8, 1957, 27003.

Author : Poroshin, K.T.; Kozarenko, T.D.,
Khurgin, Yu. I.

Inst : Academy of Sciences of USSR.

Title : Mutual Conversions of Dipeptides and Their Anhydrides.

Orig Pub: Dokl. AN SSSR, 1956, 109, No. 2, 329 - 331.

Abstract: The stability of glycylglycine diketopiperazine (I) and alanylalanine diketopiperazine (II) in alkaline medium was studied. The hydrolysis constants for I and II, equal to $pK_{10.8}$ and 12.0 correspondingly, were computed from the measurements of hydrolysis depths of I and II at various pH in alkaline medium and 40° . The

Card 1/2

PAROKHIN, K. T., KASARENKO, T. D., and KHURCHIN, I. Y.

"Mechanism and kinetics of the polycondensation of esters of amino acids,"
a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers,
28 Jan-2 Feb 57, Moscow, Organic Chemistry Research Inst.

B-3,084,395

POROSHIN, K. T.

✓ Kinetics and mechanism of the polycondensation of the esters of amino acids. II. Kinetics of the polycondensation of the ethyl ester of glycine? Yu. I. Khurgin, K. T. Poroshin, and T. D. Kozarenko. *Izv. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1957, 174-8; cf. C.A. 51, 4947b. The kinetics of the polycondensation of the Et ester of glycine was studied. It was established that the rate const. for the reaction depends on the initial concn. of CO₂. The change in the const. with temp. was detd. The activation energy above 20° was calcd., $\Delta E_1 = 8.00$ kcal./mole. J. Rovtar Leach

PM
ATT

Poroshin, K. T.

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topo-chemistry Catalysis.

B-9

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3858

Author : T.D. Kozarenko, K.T. Poroshin, Yu. I. Khurgin.
Inst : Academy of Sciences of USSR, Section of Chemical Sciences.
Title : Kinetics and Chemism of Polycondensation of α -Aminoacid Esters. 3. Influence of Carbon Dioxide on Composition of Polycondensation Products of Glycine Ethyl Ester.

Orig Pub: Izv. AN SSSR, Otd. Khim. n., 1957, No 5, 563-568.

Abstract: The composition of polycondensation products of glycine ethyl ester was studied at various ratios of the initial molar CO_2 concentrations and the monomer. The reaction product was analyzed after the monomer removal. The reaction product was treated with diethyl ester and was a thick mass containing a mixture of peptide ethyl esters. The obtained kinetic curves permit to establish 2, differing by speed, phases in the poly-

Card : 1/3

-9-

POROSHIN, K.T.

V. Kinetics and chemistry of polycondensation of esters of α -amino acids. V. Reaction of carbon dioxide with esters of glycine and its peptides. T. D. Kozarenko, K. T. Poroshin, and Yu. I. Khurina (N.D. Zelinski Inst. Org. Chem., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1957, 640-2; cf. C.A. 51, 494^b.--The kinetics of the reaction of CO_2 with $\text{H}_2\text{NCH}_2\text{CO}_2\text{Et}$ was detd.; the product is a carbamate described by Frankel and Katchalsky (C.A. 37, 6349^a). Et esters of glycylglycine and DL-alanylglycylglycine gave carbamates which, like the above product, were relatively unreactive to polycondensation and could be kept for prolonged periods. Kinetic curves are shown. VI. Mechanism of polycondensation of esters of α -amino acids. K. T. Poroshin, T. D. Kozarenko, and Yu. I. Khurina. *Ibid.* 642-4. The mechanism of the polycondensation of esters of amino acids with CO_2 is discussed in the light of available literature data; it is suggested that the 1st stage is the formation of $\text{HO}_2\text{C}_2\text{NHCH(R)CO}_2\text{R}$ by addn. CO_2 to the amino group, rapidly followed by formation of a carbamate, $\text{RO}_2\text{C}_2\text{CH(R)NH}_2\text{HO}_2\text{C}_2\text{NHCH(R)CO}_2\text{R}$ (I). Such compds. from esters of amino acids are rather stable, but the above type is thermolabile, as are carbamates of the type $\text{RO}_2\text{C}_2\text{CH(R)NH}_2\text{HO}_2\text{C}_2\text{NHCH(R)CO}_2\text{R}$ (II). On heating these yield the peptide ester and the free ester of the amino acid, as well as CO_2 . The main polycondensation is believed to be the reaction of I with the peptide ester, forming II, which in its decomp. yields the ester of an $n+1$ peptide, explaining the chain growth. Cf. Frankel and Katchalsky (C.A. 37, 6349^a). G. M. Kosolapoff.

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POLOSHIN, K.F.

Modification of the protein molecule. Report No.1: Interaction between the products of primary destruction of protein and anhydrides of N-carboxyglycine, d, l-alanine and d, l-proline. Izv. AN SSSR. Otd. khim. nauk no.8:996-998 Ag '57. (MIRA 11:2)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Proteins) (Anhydrides)

62-2-19/28

AUTHOR: Poroshin, K. T.,

TITLE: On the Modification of the Protein Molecule (Ob izmenenii belkovoy molekuly) Information2: The Combination of Amino Acids and Peptides With Carboxyl Groups of the Protein Molecule (Soobshcheniye 2. Prisoyedineniye aminokislot i peptidov po karboksil'nym gruppam belkovoy molekuly)

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 2, pp. 236-237 (USSR)

ABSTRACT: Among the numerous methods of protein modifications that of the combination of amino acids over the peptide binding is especially interesting. The protein may be considered a polyelectrolyte, where the amino - and carboxyl-groups may serve for the production of the peptide bond. This linkage of amino acids with protamines, gelatin, albumin and the product of hydrolysis of the casein-peptone was attained on the amino-groups of these proteins. The purpose of the investigation reported in this paper was the introduction of amino acids and peptides into the protein molecule by means of their linkage over the carboxyl groups. As test object served casein and the albumin of the

Card 1/2

On the Modification of the Protein Molecule. Information 2: 62-2-19/28
 The Combination of Amino Acids and Peptides with Carboxyl Groups of the
 Protein Molecule

egg. The carbobenzoxy-derivative of casein was used for the reaction, and beside this protein also, the albumin of the egg. The protein-carboxyl-groups were by means of the ethyl ether of chlorocarbonic acid converted to mixed anhydrides which were used in the reaction with the chlorohydrates of the corresponding esters of amino acids and peptides. For the chemical modification of the protein molecule see the scheme on page 236. There are 7 references, 4 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D. Zelinskiy
 (Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR)

SUBMITTED: September 27, 1957

AVAILABLE: Library of Congress

Card 2/2

1. Protein molecules-Modification
2. Amino acids-Chemical reactions
3. Peptides-Chemical reactions
4. Carboxylic acids-Chemical reactions

AUTHORS: Andreyeva, N. S., Iveronova, V. I., 62-58-3-27/30
Kozarenko, T. D., ~~Poroshin, K. T.~~,
Shibnev, V. A., Shutskever, N. Ye.

TITLE: Investigation of the Structure of Peptides Containing
Glycine and l-Proline (Issledovaniye struktury peptidov,
soderzhashchikh glitsin i l-prolin)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh
Nauk, 1958, Nr 3, pp. 376-377 (USSR)

ABSTRACT: The investigation of peptides containing amino acids is
of importance for the investigations of the structure of
proteins. The stereochemical rôle of pyrrolidine rings
within the configuration of the polypeptide chain has not
yet been sufficiently explained. In general it is assumed
that the bends of the polypeptide chains are formed in such
points, where residues of proline and oxyproline are present.
At present structural investigations of the peptides and
polypeptides of numerous amino acids are carried out.
There have, however, only few works been published on the
investigation of compounds containing amino acids. The
aim of this work is the investigation of the above mentioned

Card 1/2

Investigation of the Structure of Peptides Containing Glycine and l-Proline 62-58-3-27/30

structure of peptides. Glycyl-l-prolyl, l-prolylglycine, carbobenzoxyglycyl-l-prolyl and the anhydride of glycyl-l-proline were synthesized. Furthermore the first stage of the x-ray analysis of the synthesized compounds was finished.

There are 1 table and 10 references, 1 of which is Soviet.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta i Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Physics Department of Moscow State University and the Institute for Organic Chemistry imeni N. D. Zelinskiy, AS USSR)

SUBMITTED: October 31, 1957

Card 2/2

AUTHOR: Poroshin, K. T.

SOV/62-58-8-20/22

TITLE: On Carbohydrate---Peptide Complexes (Ob uglevodno-peptidnykh kompleksakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 8, pp. 1015-1015 (USSR)

ABSTRACT:

The author of this letter says that he and his collaborators investigated the combination of peptides with carbohydrates (at a simultaneous formation of the carbohydrate-peptide complex). The anhydrides of N-carboxylglycine and of d, l-alanine were polycondensed in aqueous dioxane medium at a temperature of 0-10° in water-soluble carboxy-methyl cellulose (at a degree of substitution of 75-80%). Furthermore the author describes the properties of the compounds produced. By converting the carboxyl groups of the carboxy-methyl cellulose into mixed anhydrides of chlorocarbonic ester with a subsequent condensation (with d, l-alanyl diglycine and tetra-d, l-alanine) the author synthesized water-soluble carbohydrate-peptide compounds. At the same time compounds were produced by polycondensing anhydrides of the N-carboxy glycine and d, l-alanine

Card 1/2

On Carbohydrate---Peptide Complexes

SOV/62-58-8-20/22

with methyl glucosides and xylose.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy,
AS USSR)

SUBMITTED: May 29, 1958

Card 2/2

AUTHORS: ~~Poroshin, K. T.~~ Kozarenko, T. D., Shibnev, SOV/62- 58- 9- 20/26
V.A.

TITLE: The Exchange Reactions Between l-Prolylglycine-Diketopiperazine and Its Dipeptides (O vzaimoprevrashchenii diketopiperazina l-prolilglitsina i yego dipeptidov)

PERIODICAL: Izvestiya Akademii nauk, SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 9, pp 1129 - 1132 (USSR)

ABSTRACT: Glycine, l-proline, and α -amino acids in general are especially important in relation to the question of the structure of collagen. The separation of considerable amounts of glycyl-l-proline and l-prolylglycine from hydrolysed collagen leads to the assumption that both dipeptides are structural elements in the protein molecule. The protein hydrolysis has been carried out under various conditions in the past (Refs 1-3), and this makes difficult a clear explanation of the preponderance of glycyl-l-proline and l-prolylglycine-dipeptide in the chain. The authors of this brief communication attempted to form a cyclic anhydride of glycyl-l-proline and l-prolylglycine. They further investigated the possibility of

Card 1/2

The Exchange Reactions Between l-Prolylglycine- Diketo- SOV/62-58-9-20/26
piperazine and Its Dipeptides

hydrolysing the anhydride to the dipeptide. It was found that even under moderate conditions the anhydride of l-prolylglycine forms glycyl-l-proline in base and l-prolylglycine in acid. The hydrolysis of the l-prolylglycine anhydride does not go to completion, but attains an equilibrium condition. The formation of cyclic anhydrides of both dipeptides is simple, especially for glycine-l-proline. There are 1 figure and 7 references, 1 of which is Soviet.

ASSOCIATION: Institut organicheskoy khimii im.N.D.Zelinskogo Akademii nauk
SSSR (Institute of Organic Chemistry imeni N.D.Zelinskiy, AS USSR)

SUBMITTED: March 22, 1958

Card 2/2

5(4); 5(3)

AUTHORS:

SOV/62-58-12-5/22

Poroshin, K. T., Khurgin, Yu. I., Prokhorova, N. I.

TITLE:

Kinetics and Chemism of the Polycondensation of α -Amino Acid Esters (Kinetika i khimizm polikondensatsii efirov α -amino-kislot) Communication 7: Kinetics of the Change in Composition of Polycondensation Products of Glycine Ethyl Ester in the Presence of N-Carboxy Glycine Anhydride (Soobshcheniye 7. Kinetika izmeneniya sostava produktov polikondensatsii etilovogo efira glitsina v prisutstvii anhidrida N-karboksiglitsina)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1428-1434 (USSR)

ABSTRACT:

In the present paper the results of investigations of the kinetics of a joint polycondensation of α -amino acid esters and N-carboxy- α -amino acid anhydride were shown by the example of glycine derivatives as well as of the effect of the relative anhydride concentration (A/T) on the composition of reaction products. The majority of the experiments was carried out with a 5% solution of the initial products in dioxane. It was found that with the content of initial products changing from 0.5 to 10% the amount of the solvent does not exercise any

Card 1/3

SOV/62-58-12-5/22

Kinetics and Chemism of the Polycondensation of α -Amino Acid Esters.
 Communication 7: Kinetics of the Change in Composition of Polycondensation
 Products of Glycine Ethyl Ester in the Presence of N-Carboxy Glycine Anhydride

essential effect on the course of the reaction. The qualitative composition of the polycondensation products was chromatographically investigated. The content of tetra and tripeptide fraction, and of diketo piperazine (Ref 20) was determined by the method of differential titration. The average degree of the polycondensation was determined by measuring the amino nitrogen according to the Van-Slyayk method. At the same time, experiments without solvents were carried out (in the block). In this case all processes developed more rapidly, they did, however, not show any qualitative differences. A comparison between the results obtained and those of the investigation of the polycondensation of glycine ethyl ester in the presence of carbon dioxide (Ref 19) shows that the rules governing this process are basically the same in the course of either process. However, intermediate products in the first polycondensation stage show differences: by the addition of CO_2 a symmetrical carbamate $\text{R}'\text{OOC}.\text{CHR}.\text{NH}_2^+.\text{OOC}.\text{NH}.\text{CHR}.\text{COOR}'$ is formed; by the initiating of N-carboxy amino acid anhydride an asymmetric

Card 2/3

SOV/62-58-12-5/22

Kinetics and Chemism of the Polycondensation of α -Amino Acid Esters.
Communication 7: Kinetics of the Change in Composition of Polycondensation
Products of Glycine Ethyl Ester in the Presence of N-Carboxy Glycine Anhydride

carbamate is formed $R'OOC.CHR.NH_2^+ \cdot ^-OOC.NH.CHR.CO.NH.CHR.COOR'$.

This apparently explains the observed differences in the
velocity of the course of the process as well as in the distri-
bution of reaction products in the individual stages.

There are 4 figures and 21 references, 5 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii imeni N. D. Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy
Academy of Sciences USSR)

SUBMITTED: February 26, 1957

Card 3/3

POROSHIN, K.T.; PROKHOROVA, N.I.; KHURGIN, Yu.I.

~~Kinetics~~ and mechanism of the polycondensation of α -amino acid esters and peptides. Part 10: Constitution of the products of interaction between the ethyl ester of d, l -alanine and N-carboxy- d, l -alanine anhydride. Vysokom. soed. 1 no.6:907-912 Je '59. (MIRA 12:10)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Alanine)

5(3)

AUTHORS:

Poroshin, K. T., Shibnev, V. A.,
Kozarenko, T. D.

SOV/62-59-4-28/42

TITLE:

Synthesis of Peptides Containing L-Proline and Glycine (Sintez peptidov, soderzhashchikh L-prolin i glitsin)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 736-738 (USSR)

ABSTRACT:

This is a short report on the investigation of the synthesis and properties of L-prolylglycyl-L-proline, L-prolylglycyl-L-prolylglycine and of polymers which contain these groups in the molecular chain. The peptides mentioned can be synthesized by the method of the mixed anhydrides (Ref 9) and the respective polymers by the method of the polycondensation of methyl esters of these peptides. The synthesis of L-prolylglycyl-L-prolylglycine esters was carried out in two ways: 1) by gradual addition of the methyl esters of amino acids (glycine, L-proline, glycine) to carbobenzoxy-L-proline (Scheme, I); 2) by addition of the methyl ester of L-prolylglycine to carbobenzoxy-L-prolylglycine (stage A, Scheme). The synthesized peptides and their esters were identified by

Card 1/2

Synthesis of Peptides Containing L-Proline and
Glycine

SOV/62-59-4-28/42

means of descending chromatography (Table). There are 1 table
and 11 references, 2 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy
of the Academy of Sciences, USSR)

SUBMITTED: July 19, 1958

Card 2/2

5(3,4)
AUTHORS:

SOV/62-59-5-31/40
Noskova, N. B., Poroshin, K. T., Kozarenko, T. D.

TITLE:

On the Accelerating Effect of the Peptide Esters on the Polycondensation Reaction of Glycine-ethyl Ester (Ob uskoryayushchem deystvii na reaktsiyu polikondensatsii etilovogo efira glitsina efirov peptidov)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 5, pp 935-936 (USSR)

ABSTRACT:

On the basis of the observed acceleration of the condensation reaction of glycine-ethyl ester by addition of the esters of the polymer, the autocatalytic character of this reaction has already been pointed out in previous papers (Ref 1). In the present paper the autocatalytic character of the polycondensation reaction of the esters of amino-acids is investigated, for which purpose the influence exercised by certain additions of tripeptide and polycondensate upon the rate of the polycondensation reaction of glycine-ethyl ester is subjected to a close examination. The polycondensation reaction mentioned was investigated for the purpose of determining its character, i.e. with the addition of CO_2 , CO_2 + tripeptide ester, and

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On the Accelerating Effect of the Peptide Esters on the Polycondensation
Reaction of Glycine-ethyl Ester

further without the addition of CO_2 , addition of polycondensate, and addition of tripeptide ester in dependence on the time of reaction (Figs 1,2). It was found that the reaction time of polycondensation in the absence of CO_2 passes considerably more slowly and is divided into two stages. A rather long first stage, in which hardly any polycondensation occurs at all, (58 hours) is followed by a second in which the kinetics of the development of polycondensation is of the first order. The presence of polycondensate shortens the first stage. The reaction kinetics of the second stage remains one of the first order owing to the additions. There are 2 figures and 8 references, 4 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: October 22, 1958
Card 2/2

5(3)

AUTHORS:

307/62-59-5-34/40
Khurgin, Yu. I., Poroshin, K. T., Kozurenko, T. D.

TITLE:

The Kinetics of the Polycondensation of Glycine-ethyl Esters
in the Presence of Its Carbamate (Kinetika polikondensatsii
etilovogo efira glitsina v prisutstvii yego karbamata)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 5, pp 941-943 (USSR)

ABSTRACT:

In the course of previous investigations of the kinetics of the
polycondensation of esters of the α -amino acids it has been
shown that the initiating effect of carbon dioxide is connected
with the formation of the symmetric carbamate:

$R'OOC.CHR.NH_2 + OOC.NH.CHR.COOR' \rightarrow$ Carbamate formation is an
endothermic reaction, and therefore overheating of the reaction
mass may easily occur if CO_2 is added at an increased rate. The

carbamate itself causes no thermal impediment to polyconden-
sation. In this connection, the kinetics of the consumption
of monomers and the variation of the composition of the poly-
condensed glycine-ethyl ester obtained in the presence of a
carbamate was investigated in the present case. The investi-

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gation methods are the same as those of reference 1. The content of free monomers, the reaction product yield, and their diketopiperazine and amino nitrogen content was determined. Figures 1 and 2 show the velocity constant of the consumption of monomers and, accordingly, the concentration of the diketopiperazines in the polycondensation products when carbamate and CO_2 are used as initiators. From the difference alone between the consumption of monomers conclusions are drawn as to a difference in the kinetics of the aggregation of the diketopiperazines. From figure 2, which shows the concentration of diketopiperazines in the final products, a distinct difference in the two initiators may be recognized, especially at the beginning of the reaction. The difference is caused by heating the reaction mass by the endothermal formation of carbamate when using the CO_2 -initiator. When carbamate is used as initiator, the reaction product yield remains proportional to the time of reaction, and also the amino nitrogen ($\text{NH}_2\text{-N}$) content in the reaction products remains constant. The authors thank Ye. V. Leonova for her assistance.

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The activation energy of the affiliation of the monomer to the peptide was determined. There are 2 figures and 5 references, 4 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: October 28, 1958

Card 3/3

5(3))
AUTHORS: Shibnev, V. A.; Kozarenko, T. D., Poroshin, K. T. SOV/62-59-6-31/36

TITLE: On the Separation of L-Proline and L-Oxyproline by the Rhodanil Method (O vydelenii L-prolina i L-oksiprolina rodanilatnym sposobom)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 6, pp 1132 - 1133 (USSR)

ABSTRACT: By the rhodanyl method for the separation of L-proline and L-oxyproline the imino acids are always obtained with some impurities because of the great similarity of these acids. The one always contains an addition of the other. Therefore the method was changed somewhat so that by means of it it is possible not only to separate the L-proline required but also the L-oxyproline in a chromatographically pure form from the hydrolysate of the gelatin. The yield in L-oxyprolin obtained with this method was 12% of this imino acid contained in the gelatin. The separation of the imino acids from the gelatin was made according to Bergmann. After the separation of L-proline (pure) from the mixture of L-proline and L-oxyproline, the latter (60%) is obtained with an admixture of 40% L-proline. This mixture is treated with methanol and dry ether and the powder of the imino acids thus obtained

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Rhodanilic Method.

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from methanol water is subjected to repeated re-crystallization, which leads to L-oxyproline in purest form. The L-proline contained in the methanol filtrate is then in a similar way purified from the L-oxyproline still contained in vestige, and thus finally also purest L-proline is obtained. There are 6 references, 1 of which is Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk
SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the
Academy of Sciences, USSR)

SUBMITTED: December 9, 1958

Card 2/2

5(3)

AUTHORS:

Kozarenko, T.D., Noskova, N.B.,
Poroshin, K.T.

SOV/62-59-7-25/38

TITLE:

On the Chlorhydrate-Method for the Determination of the
Monomer in the Reaction of Polycondensation of the Esters
of α -Amino Acids (O khlorgidratnom metode opredeleniya
monomera v reaktsii polikondensatsii efirov α -aminokislot)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 7, pp 1324 - 1327. (USSR)

ABSTRACT:

The synthesis of polyamino acids by polycondensation
develops chiefly in the first stage by successive chain
formation from the monomers (Type A) and in the further stages
by interreaction of the polymer molecules
(Type B). The reaction-type A develops more rapidly than
the type B. The consumption of monomers for chain formation
is determined in the final product from the non-reacting
monomers. Separation of these monomers is easy, but the
determination in the ether extract is connected with some
difficulties. A new method was elaborated by the authors
precipitating the monomers as their hydrochlorides. Beside
the possibility of quantitative separation of the salts from

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the ether extract, this method offers the advantage that the salts are also not destroyed by warming to

100°; so they may be used for further polycondensation.

The determination of the ethyl esters of glycine, d, l-phenylalanine l-alanine, d, l-valine and l-proline is described in the experimental part. The results are listed in tables 1-4. There are 4 tables and 12 references, 2 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR
(Institute of Organic Chemistry imeni N.D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: November 30, 1957

Card 2/2

5(3)
AUTHORS:

Khurgin, Yu.I., Kozarenko, T.D.,
Poroshin, K.T.

SOV/62-59-7-26/38

TITLE:

The Kinetics and Chemism of the Polycondensation of the Esters of α -Amino Acids (Kinetika i khimizm polikondensatsii efirov α -aminokislot)
VIII. The Influence of the Initial Content of Carbamate on the Velocity of the Polycondensation of the Ethyl-Ester of Glycine. (Soderzhaniye β . Vliyaniye nachal'nogo soderzhaniya karbamata na skorost' polikondensatsii etilovogo efira glitsina)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1959, Nr 7 pp 1328 - 1332 (USSR)

ABSTRACT:

Introducing the well-known mechanism of polycondensation of the esters of α -amino acids under the influence of simple initiators- in this case CO_2^- and the formation of initiator substrate is described briefly (Refs 1-4). It had been shown, that the original initiator for the polycondensation is not CO_2 , but the symmetric carbamate as the arising substrate. If this is true, it must be the same for

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the velocity of polycondensation, no matter whether carbamate is formed by the addition of CO_2 or is added directly. Moreover, for a small amount of $i/m \sim i/m$ is the relative, molar initial concentration of the initiator i , related to the monomer m - the consumption of the monomer must be proportional to the initial amount of carbamate. In the investigation of kinetics it had been shown that this proportionality was maintained for all initial concentrations. The consumption of monomer may be represented by the following equation:

$$m(t) = (1 - 2 \frac{i}{m_0}) e^{-k(\frac{i}{m_0})t}$$

In this paper the above named assumption is investigated. The dependence of the velocity of monomer consumption on the initial concentration of the initiator was investigated. The content of free monomers in the reaction product was

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determined by means of the improvement method. Moreover, the consumption of monomers was investigated with immediate initiation with symmetric carbamate. The experimental data for the consumption of monomers with initial concentrations of initiator CO_2 $\xi_0 = 0.01, 0.02, 0.04, 0.08$ and 0.16 are demonstrated in a semi-logarithmic scale in figure 1. For all i/m monomer's consumption is first class. The extrapolation of the straight line cuts the ordinate in the point $\lg m = 0 (m = 1) = m^0$. m^0 is reduced with increasing ξ_0 . Therefore m^0 is the exact initial concentration for the secondary stage of the reaction. In the equation obtained from the experiment:

$$m(t) = m^0 \cdot e^{-kt}$$

Card 3/5 m^0 and k were calculated by the method of the least squares.

The Kinetics and Chemism of the Polycondensation SOV/62-59-7-26/38
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The results are listed in Table 1. $\frac{1 - m^0}{f_0}$ was calculated

as the stoichiometrical coefficient of the reciprocal effect
of the monomer with CO_2 in the primary stage of reaction.

In this case of carbamate initiation m^0 was found to
be 0.995 i.e. it was equal to the initial amount of the
monomer. This result may serve as evidence that carbamate
is formed in the first stage of the reaction. The constants
of velocity of monomer consumption in dependence on the
initial concentrations of carbamate i/m are listed in table 2.
The kinetic curve (Fig 2) is a straight line up to
concentrations $i/m = 0.07$. Moreover the velocity of monomer
consumption was proved to be independent of the length
of the formed chain of polymers. There are 2 figures, 2 tables,
and 7 references, 5 of which are Soviet.

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The Kinetics and Chemism of the Polycondensation SOV/62-59-7-26/38
of the Esters of α - Amino Acids. VIII. The Influence of the Initial
Content of Carbamate on the Velocity of the Polycondensation of the
Ethyl-Ester of Glycine.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii
nauk SSSR
(Institute of Organic Chemistry imeni N.D. Zelinskiy of
the Academy of Sciences, USSR)

SUBMITTED: November 30 , 1957

Card 5/5

5(3), 5(4)
AUTHORS:

SOV/62-59-8-18/42

Poroshin, K. T., Khurgin, Yu. I., Kozarenko, T. D.

TITLE:

Kinetics and Chemism of the Polycondensation of Esters of the α -Amino Acids and Peptides. Communication 9. On the Autocatalytic Nature of the Polycondensation of the Ethylester of Glycine in the Presence of Carbon Dioxide

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, pp 1453-1457 (USSR)

ABSTRACT:

In the present paper the assumption concerning the autocatalytic nature of the polycondensation reaction of the esters of α -amino acids in the presence of CO_2 is investigated. For this purpose the yield of the polycondensation products of ethylglycine ester was measured and their composition determined. The condensation product was fractionated and the products of the solid phase determined by weighing. It consisted of ethyl esters of glycine peptides of various lengths, and di-ketopiperazine. Several test series with different CO_2 contents in the initial products were carried out. From the yields obtained it could be seen that the polycondensation of ethylglycine ester is an autocatalytic process with a gradual growth of the peptide chain. The growth of the peptide

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Kinetics and Chemism of the Polycondensation of Esters of the α -Amino Acids and Peptides. Communication 9. On the Autocatalytic Nature of the Polycondensation of the Ethylester of Glycine in the Presence of Carbon Dioxide

chain is more rapid than the formation of new chains. Thus two stages could be observed: formation of new chains and growth of the chains. There are 4 figures, 2 tables, and 5 Soviet references.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: December 10, 1957

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5(3)

AUTHORS:

Kozarenko, T. D., Poroshin, V. T.

SOV/62-59-8-25/42

TITLE:

Investigation of the Influence of the Amount of the Alkoxy-
Residue of Glycine Esters on the Reaction Rate of the Poly-
condensation

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 8, pp 1484-1485 (USSR)

ABSTRACT:

The polycondensation of esters of the α -amino acids may be greatly affected by the presence of substances of an acid nature. This effect was observed in the case of glycine ester by the effect of the alkoxy residue. When this residue increases (methyl-, ethyl-, propyl-) the reaction rate of the polycondensation is greatly diminished. This phenomenon is particularly marked at the transition from methyl to ethyl. The same observation was already made by Kachal'skiy (Ref 2) who obtained, at the polycondensation of methylglycine ester, much higher molecular weights than in the case of other glycine esters. This effect was particularly strong in the case of the polycondensation of peptide esters which do not easily undergo a polycondensation reaction. The facts were proved experimentally in the present paper. The n-propyl-, n-butyl-, and methyl esters, the latter

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Investigation of the Influence of the Amount of the SOV/62-59-8-25/42
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prepared according to Katchalski (Ref 2), were reacted with initiating carbon dioxide. The experimental results (monomer consumed as a function of the duration of the reaction) are illustrated in the figure. The formation of the solid phase (diketonepiperazine) starts after as little as one hour in the case of methylglycine ester, but after three hours in the case of the other compounds. Diketonepiperazine was determined according to the method described in reference 6. The relevant values are contained in table 1. It is stressed as being highly significant that the isopropylglycine ester is much closer to the ethylglycine ester as regards its reaction rate than to the n-propyl ester. Similar laws were also observed in the case of DL-alanine, in accordance with data found in relevant publications (Ref 3). There are 1 figure, 1 table, and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk
SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the
Academy of Sciences, USSR)

SUBMITTED: December 26, 1958
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SOV/62-59-9-24/40

5(3)

AUTHORS:

Kozarenko, T. D., Poroshin, K. T., Kuz'mina, M. G.

TITLE:

Investigation of the Polycondensation of Glycylglycine Ethyl Ester

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 9, pp 1663-1665 (USSR)

ABSTRACT:

In order to clarify the course of the polycondensation reaction of glycine ethyl ester, the polycondensation of dimeric glycylglycine ester at 40°C and in the presence and absence of CO₂ is investigated in the present paper. The course of the reaction was determined by the percentage of ethoxyl groups in the reaction mass. The polycondensation of glycylglycine ester is very slow (300 hr). CO₂ accelerates only the condensation of glycine ethyl ester, not, however, that of glycylglycine ethyl ester. In the latter reaction the carbethoxyl group of the symmetric carbamate formed by the dipeptide is activated, but is too far removed from the group requiring activation for the reaction to continue. Thus it is concluded, that the polycondensation of glycine ethyl ester does not proceed via the dimer, but rather by the successive, independent addition of amino acid ester molecules to a peptide

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ester molecule. Without solvent, the reaction began only after 150 hrs. By paper chromatography, piperazinedione and tetraglycine ethyl ester were found to be the final reaction products. The condensation reaction is described, and the apparatus used is given in figure 1. The tetraglycine ester was determined by means of differential titrimetric analysis. There are 2 figures and 9 references, 5 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: October 23, 1958

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5(3)

AUTHORS:

Poroshin, K. T., Khurgin, Yu. I.,
Kozarenko, T. D.

SOV/20-124-1-29/69

TITLE:

Polycondensation of Glycine Ethyl Ester in the Presence of
Its Carbamate (Polikondensatsiya etilovogo efira glitsina
v prisutstvii yego karbamata)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1,
pp 105 - 106 (USSR)

ABSTRACT:

The carbamate formation represents the first stage of the reaction mentioned in the title of the α -amino acids in the presence of CO_2 (Ref 1). It proceeds practically instantly (Ref 2) as compared with the other stages. It was earlier proved (Ref 3) that the course of the polycondensation is determined by the relative initial concentration of the initiator (in this case the carbamate). Although the α -amino acid esters as well as their carbamates are rather stable, they are subjected to polycondensation on CO_2 addition. Thus, carbamate and not CO_2 is the real initiator.² Thus, polycondensation must occur also on adding carbamate to the monomeric ester. The rate of the polycondensation and the com-

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position of the resulting products will be independent of the way of introducing the initiator. The purpose of the present paper is to check the assumption that the carbamates actually initiate the polycondensation of the α -amino acid esters in the presence of CO_2 . As can be seen from the data on the monomer consumption (Fig 1) the reaction initiated by carbamate is of first order, viz. it proceeds in the same way as on initiation by CO_2 . It was earlier proved that the rate of the monomer consumption rises with an increase in the initial concentration of the initiator (Ref 3). In the reaction initiated by carbamate the first stage of the rapid consumption of the initiator is missing. This rapid stage, however, occurs in the initiation by CO_2 (Fig 1). The chromatographic investigation of the polycondensate proved that the quantitative composition of the reaction products is independent of the way of formation of the initial reaction mixture. There are 1 figure and 7 references, 4 of which are Soviet.

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